

# Welcome to NERSC TotalView Tutorial



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User Engagement Group

# Tutorial on Using TotalView

- Presented by Bill Burns and Dean Stewart of Perforce Software Inc.
- Training agenda and presentation slides, etc. available at <https://www.nersc.gov/users/training/events/totalview-tutorial-december-9-2020/>
- Training hands-on materials available in `/global/cfs/cdirs/training/2020/totalview`

# Running Jobs

- Only a few Haswell nodes are reserved for today's tutorial (8:30 am-1:30 pm)

```
$ salloc -N 1 -C haswell -t 30:00 -q debug --reservation=tv_res -A nintern
```

- To run on KNLs or Cori GPUs, use your own project account
  - See <https://docs-dev.nersc.gov/cgpu/access/>

# TotalView UI - Classic vs. New

- New UI keeps getting improved, but some features (e.g., MemoryScape) still available in Classic UI only
  - Today's tutorial using New UI
  - With totalview/2020.3.11, NERSC has adopted New UI
  - NERSC webpage (<https://docs.nersc.gov/development/performance-debugging-tools/totalview/>) based on Classic UI; will soon be updated with info on New UI
- Which UI am I using:
  - Check ~/.totalview/.tvnewui: 'true' for New UI
- How to override/change UI
  - Edit the file ~/.totalview/.tvnewui
  - Use -newUI or -classicUI command-line flag
  - Set the TVNEWUI environment variable to True or False
  - Remove the ~/.totalview directory and then start TotalView

# If You Work Far Away From NERSC

- Running X11 GUIs over network: its responds painfully slow due to intrinsically high latency and inefficient bandwidth between X11 client and server
- Two solutions
  - Use NoMachine (NX) to improve the speed
    - Works for X11 window applications
    - <https://docs.nersc.gov/connect/nx/>
  - Use TV Remote Display Client (RDC)
    - Run on your desktop/laptop
    - Submit a debugging batch job on a NERSC machine and display results in real time
    - Settings for Cori will be available later
    - Linux, macOS and Windows 10 (64 bit) installation package in `$TOTALVIEW_DIR/remote_display`
      - There seems to be a problem on macOS Big Sur

Thank You!

